

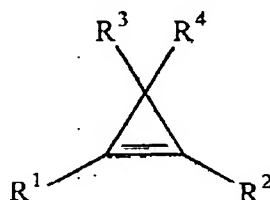
APR 08 2009

# AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the Application.

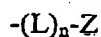
## Listing of Claims

1. (Currently Amended) A compound of the formula:



wherein:

- a) one of R<sup>1</sup> and R<sup>3</sup> is H, and: (x) two of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are H or (y) R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are H or (z) R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are H, and R<sup>2</sup>, R<sup>4</sup>; and the other of R<sup>1</sup> and R<sup>3</sup> are independently selected from H and a group of the formula:

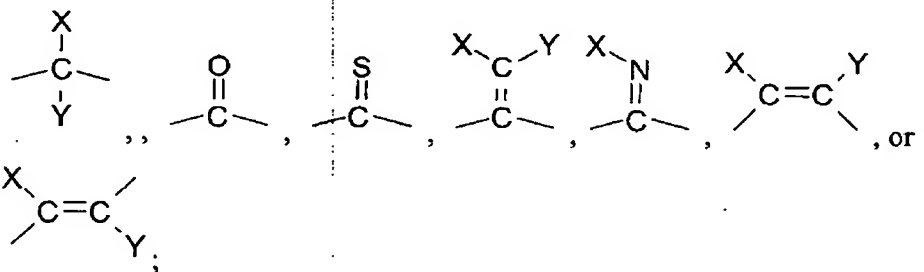


wherein:

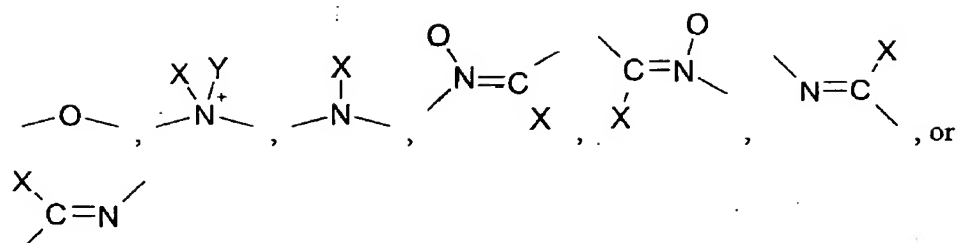
- i) n is an integer from 1 to 12;  
ii) each L is independently selected from a member of the group D1, D2, E, or J

wherein:

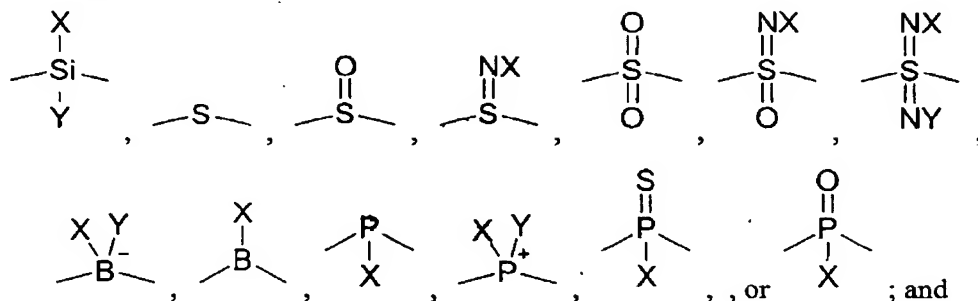
D1 is of the formula:



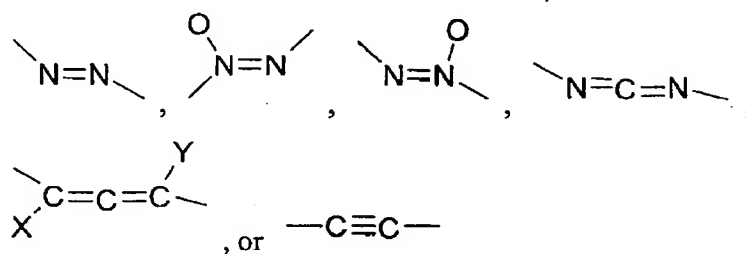
D2 is of the formula:



E is of the formula:

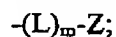


J is of the formula:



wherein:

A) each X and Y is independently a group of the formula:



and

B) m is an integer from 0 to 8; and

C) no more than two D2 or E groups are adjacent to each other and no J groups are adjacent to each other;

iii) each Z is independently selected from:

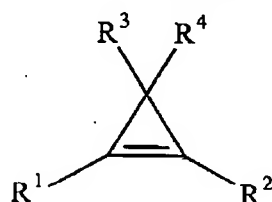
A) hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, or

- B) a group G, wherein G is an unsubstituted or substituted; unsaturated, partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or fused; 4 to 14 membered carbocyclic or heterocyclic ring system wherein;
- 1) when the ring system contains a 4 membered heterocyclic ring, the heterocyclic ring contains 1 heteroatom;
  - 2) when the ring system contains a 5, or more, membered heterocyclic ring or a polycyclic heterocyclic ring, the heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;
  - 3) each heteroatom is independently selected from N, O, and S;
  - 4) the number of substituents is from 0 to 5 and each substituent is independently selected from X;
- b) the total number of non-hydrogen atoms in each compound is 50 or less; and
- c) the total number of heteroatoms in  $-(L)_n-Z$  is from 0 to 4; and
- d) either;
- i)  $R^1$  or  $R^3$  contains at least one group G; or
  - ii) at least one L group is an E group; or
  - iii) at least one of  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  contains one to four non-hydrogen atoms and at least one of  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  contains more than four non-hydrogen atoms;
- and its enantiomers, stereoisomers, salts, and mixtures thereof;
- or a composition thereof;
- provided that:
- a)  $-(L)_n-Z$  is other than trimethylsilyl, trimethylsilylsulfonyl or thiol; and
  - b)  $R^1$  is other than phenylsulfonyl, phenylthioethyl, diphenylhydroxymethyl, benzo[g]quinolin-7-ol-1-methyl, a malonate derivative, a substituted 3-aminocyclohexenone, a dialkoxybenzylaminocarbonyl; and
  - c)  $R^3$  and  $R^4$  are other than 2-phenyl-ethenyl, phenylthio, (4-bromo-2-methylphenyl)carbamic acid N-carbonyl, (4-bromo-2-methylphenyl)carbamic acid ethyl ester N-carbonyl, a malonate derivative, aryloxy, dithioformyl, or a dialkoxybenzylaminocarbonyl; and

d) when  $R^1$  is butyl,  $R^2$  is other than 3-methylbut-2-enyl; and

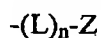
e) when  $R^1$  is pentyl,  $R^2$  is other than 4'-methoxybenzyl.

2. (Withdrawn - Previously Presented) A method of inhibiting an ethylene response in a plant comprising the step of contacting the plant with an effective ethylene response-inhibiting amount of a cyclopropene derivative of the formula:



wherein:

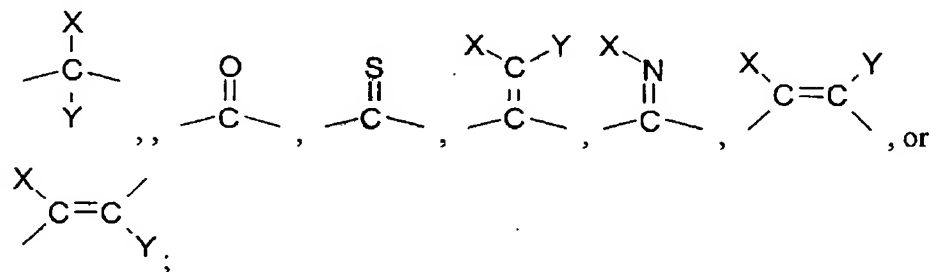
- a) one of  $R^1$  and  $R^3$  is H and  $R^2, R^4$ ; and the other of  $R^1$  and  $R^3$  are independently selected from H and a group of the formula:



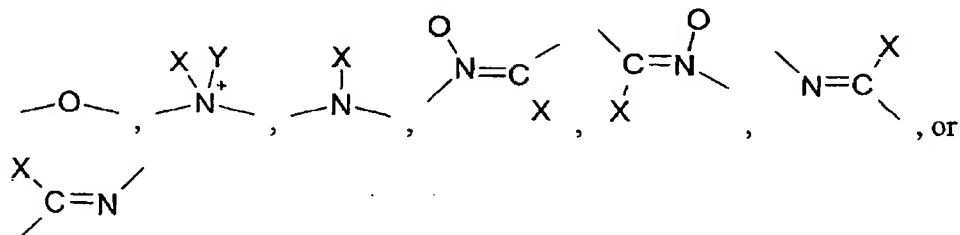
wherein:

- i) n is an integer from 0 to 12;  
 ii) each L is independently selected from a member of the group D1, D2, E, or J  
 wherein:

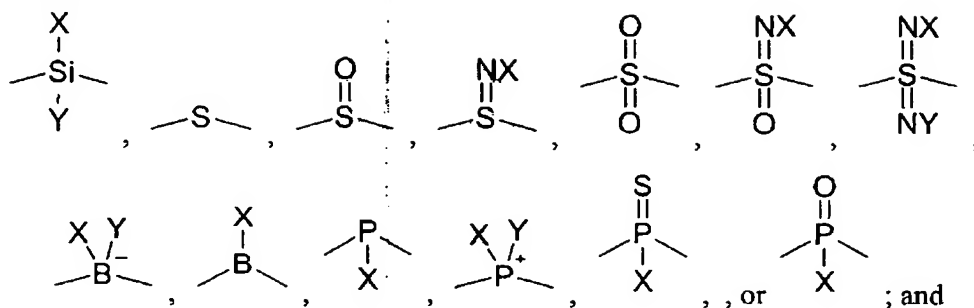
D1 is of the formula:



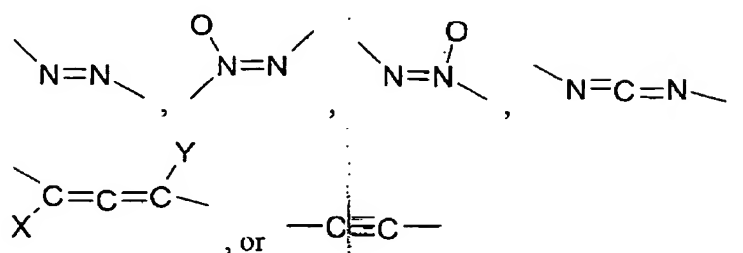
D2 is of the formula:



E is of the formula:

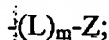


J is of the formula:



wherein:

A) each X and Y is independently a group of the formula:



and

B) m is an integer from 0 to 8; and

C) no more than two D2 or E groups are adjacent to each other and no J groups are adjacent to each other;

iii) each Z is independently selected from:

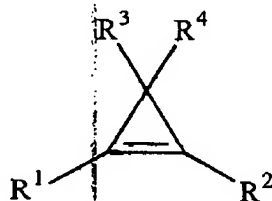
A) hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, or

B) a group G, wherein G is an unsubstituted or substituted; unsaturated, partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or fused; 3 to 14 membered carbocyclic or heterocyclic ring system wherein;

1) when the ring system contains a 3 or 4 membered heterocyclic ring, the heterocyclic ring contains 1 heteroatom;

- 2) when the ring system contains a 5, or more, membered heterocyclic ring or a polycyclic heterocyclic ring, the heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;
  - 3) each heteroatom is independently selected from N, O, and S;
  - 4) the number of substituents is from 0 to 5 and each substituent is independently selected from X;
- b) the total number of non-hydrogen atoms in each compound is 50 or less; and
- c) the total number of heteroatoms in  $-(L)_n-Z$  is from 0 to 4; and
- d) either;
- i)  $R^1$  or  $R^3$  contains at least one group G; or
  - ii) at least one L group is an E group; or
  - iii) at least one of  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  contains one to four non-hydrogen atoms and at least one of  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  contains more than four non-hydrogen atoms;
- and its enantiomers, stereoisomers, salts, and mixtures thereof;
- or a composition thereof;
3. (Withdrawn) The method of claim 2, wherein the ethylene response is one or more of ripening or senescence of flowers, fruits, and vegetables; abscission of foliage, flowers, and fruit; the shortening of life of ornamental plants, cut flowers, shrubbery, seeds, or dormant seedlings; inhibition of growth; stimulation of growth; auxin activity; inhibition of terminal growth; control of apical dominance; increase in branching; increase in tillering; changing the morphology of plants, modifying the susceptibility to plant pathogens such as fungi, changing bio-chemical compositions; abortion or inhibition of flowering or seed development; lodging effects; stimulation of seed germination; breaking of dormancy; hormone effects; and epinasty effects.
  4. (Withdrawn) The method of claim 2, wherein  $R^2$ ,  $R^3$ , and  $R^4$  are hydrogen or  $R^1$ ,  $R^2$ , and  $R^3$  are hydrogen.
  5. (Withdrawn) The method of claim 2, wherein n is from 1 to 7.
  6. (Withdrawn) The method of claim 2, wherein m is from 0 to 2.
  7. (Withdrawn) The method of claim 2, wherein:

- a) each D1 is -CXY-, -CO-, or -CS-;
  - b) each D2 is -NX- or -O-;
  - c) each E is -S-, -SiXY-, or -SO<sub>2</sub>-;
  - d) each X and Y is independently H, halo, OH, SH, -C(O)(C<sub>1</sub>-C<sub>4</sub>)alkyl, -C(O)O(C<sub>1</sub>-C<sub>4</sub>)alkyl, -O-(C<sub>1</sub>-C<sub>4</sub>)alkyl, -S-(C<sub>1</sub>-C<sub>4</sub>)alkyl, or substituted or unsubstituted (C<sub>1</sub>-C<sub>4</sub>)alkyl; and
  - e) each Z is independently H, halo, or G.
8. (Withdrawn) The method of claim 2, wherein each G is independently a substituted or unsubstituted; five, six, or seven membered; aryl, heteroaryl, heterocyclyl, or cycloalkyl ring.
9. (Withdrawn) The method of claim 8, wherein each G is independently a substituted or unsubstituted phenyl, pyridyl, cyclohexyl, cyclopentyl, pyrrolyl, furyl, thiophenyl, triazolyl, pyrazolyl, 1,3-dioxolanyl, or morpholinyl.
10. (Withdrawn) The method of claim 8, wherein the substituents, when present, are independently selected from 1 to 3 of methyl, methoxy, and halo.
11. (Currently Amended) A compound of the formula:



wherein:

- a) one of R<sup>1</sup> and R<sup>3</sup> is H, and: (x) two of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are H or (y) R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are H or (z) R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are H, and R<sup>2</sup>, R<sup>4</sup>; and the other of R<sup>1</sup> and R<sup>3</sup> are independently selected from H and a group of the formula:

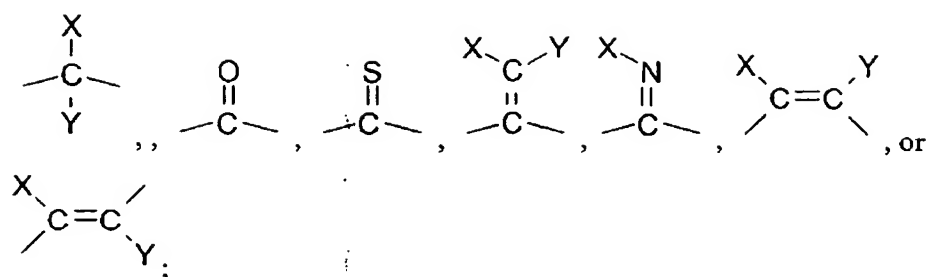


wherein:

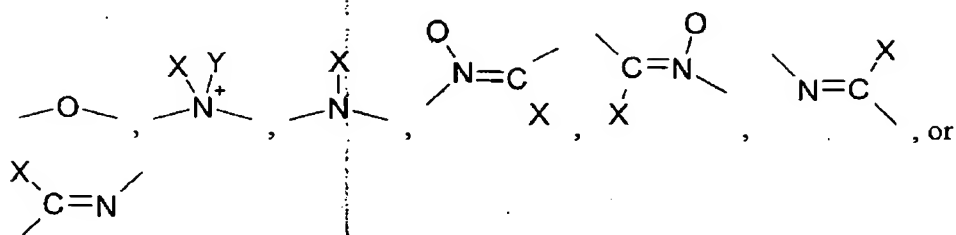
- i) n is an integer from 1 to 12;
- ii) each L is independently selected from a member of the group D1, D2, E, or J

wherein:

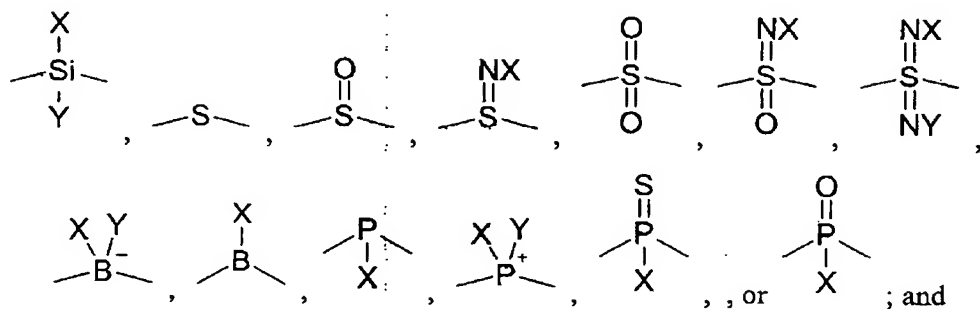
D1 is of the formula:



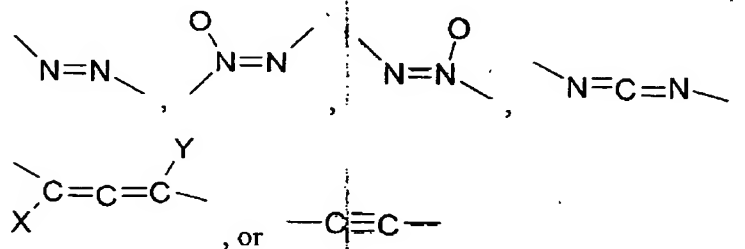
D2 is of the formula:



E is of the formula:

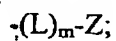


J is of the formula:



wherein:

A) each X and Y is independently a group of the formula:



and

B) m is an integer from 0 to 8; and



- C) no more than two D2 or E groups are adjacent to each other and no J groups are adjacent to each other;
- iii) each Z is independently selected from:
- A) hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, or
  - B) a group G, wherein G is an unsubstituted or substituted; unsaturated, partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or fused; 4 to 14 membered carbocyclic or heterocyclic ring system wherein;
    - 1) when the ring system contains a 4 membered heterocyclic ring, the heterocyclic ring contains 1 heteroatom;
    - 2) when the ring system contains a 5, or more, membered heterocyclic ring or a polycyclic heterocyclic ring, the heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;
    - 3) each heteroatom is independently selected from N, O, and S;
    - 4) the number of substituents is from 0 to 5 and each substituent is independently selected from X;
  - b) the total number of non-hydrogen atoms in each compound is 50 or less; and
  - c) the total number of heteroatoms in  $-(L)_n-Z$  is from 0 to 4; and
  - d) either;
    - i)  $R^1$  or  $R^3$  contains at least one group G; or
    - ii) at least one L group is an E group;
 and its enantiomers, stereoisomers, salts, and mixtures thereof;
- or a composition thereof;
- provided that:
- a)  $-(L)_n-Z$  is other than trimethylsilyl, trimethylsilylsulfonyl or thiol; and
  - b)  $R^1$  is other than phenylsulfonyl, phenylthioethyl, diphenylhydroxymethyl, benzo[g]quinolin-7-yl-1-methyl, a malonate derivative, a substituted 3-aminocyclohexenone, a dialkoxybenzylaminocarbonyl; and
  - c)  $R^3$  and  $R^4$  are other than 2-phenyl-ethenyl, phenylthio, (4-bromo-2-methylphenyl)carbamic acid N-carbonyl, (4-bromo-2-methylphenyl)carbamic acid

ethyl ester N-carbonyl, a malonate derivative, aryloxy, dithioformyl, or a dialkoxybenzylaminecarbonyl.